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July 19, 2000

VIA COURIER

Ms. Donna McLean
Assistant Administrator for Financial Services/CFO
Federal Aviation Administration
800 Independence Ave., N.W.
Washington, D.C. 20591

U.S. Department of Transportation Dockets
Docket No. FAA-00-7018 – 50
400 Seventh Street, S.W.
Room Plaza 401
Washington, D.C. 20590

Re: *Docket No. FAA-00-7018 – Fees for FAA Services for Certain Flights-Interim Final Rule*

Dear Ms. McLean:

On June 29, 2000, we submitted to the Federal Aviation Administration in the above-referenced docket the "Preliminary Objections and Comments of Air Transport Association of Canada to Second Fee Schedule for Overflights." Enclosed herewith for filing in the same docket are the original plus ten copies of the "Declaration of Joseph A. Beaudoin" ("Declaration"). Two additional copies of the Declaration are being filed at the Seventh Street address as well.

The Declaration reinforces the reasons set forth in ATAC's Preliminary Objections for why the FAA's Second Fee Schedule violates the statutory requirement that each overflight fee be "directly related" to FAA's costs to provide air traffic control and related services to the overflying aircraft. Accordingly, ATAC hereby reiterates the request in its Preliminary Objections that FAA withdraw the Interim Final Rule before the new fees become effective.

Sincerely,

Roy Goldberg

Roy Goldberg
Counsel for Air Transport Association of Canada

Enclosures
cc: Robert W. Kneisley, Esq.

BEFORE THE UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

FEES FOR FAA SERVICES FOR CERTAIN FLIGHTS	**Docket No. FAA-00-7018** **Interim Final Rule issued** **May 30, 2000**

DECLARATION OF JOSEPH A. BEAUDOIN

I, Joseph A. Beaudoin, declare the following to be true and correct under penalty of perjury:

SUMMARY

1. As a result of my nearly thirty years of service as an air traffic controller and supervisor and/or evaluator of air traffic controllers for the U.S. Federal Aviation Administration (***FAA***), I am intimately familiar with the FAA's provision of air traffic control and related services (***ATC Services***) to aircraft. The majority of my air traffic control experience has been at the Boston Air Route Traffic Control Center (***ARTCC*** or ***Center***) in Nashua, New Hampshire. The Boston Center is one of 20 ARTCC's in the continental United States that provide ATC Services to aircraft.

2. At the request of the Air Transport Association of Canada, I reviewed the FAA's "Overflight Fee Development Report in Support of 'Fees for FAA Services for Certain Flight[s],' Interim Final Rule," May 26, 2000 (***Fee Development Report***) which FAA used to develop its "Second Fee Schedule"[1] for aircraft which neither takeoff nor land in the United States (***Overflights***).

[1] I use the term "Second Fee Schedule" because the FAA's Initial Fee Schedule for overflights was issued in March 1997, and subsequently vacated by the court.

3. The Fee Development Report makes the erroneous assumption that FAA's cost of providing ATC Services to Overflights (per 100 nautical miles) is, on the average, the same as the FAA's cost of providing ATC Services to all other aircraft (per 100 nautical miles) operating within the En Route environment.[2] In fact, FAA's average cost of providing ATC Services to an Overflight is substantially lower than the average cost FAA incurs to provide ATC Services to all aircraft within the En Route environment.

a. Overflights account for a miniscule percentage of the aircraft that operate within the En Route environment. The vast majority of aircraft within the En Route environment are either: 1) flights operating in the lower altitude sectors (between 10,000 and 17,999 feet) for the entire period they are in the En Route environment (***Low Altitude Flights***), or 2) flights transitioning through such low altitude sectors on their way to/from the Terminal environment (which encompasses airports with air traffic control towers) from/to the high altitude sectors (at and above 18,000 feet) (***Transitional Flights***).

b. By their very nature, Low Altitude and Transitional Flights require a high level of FAA controller attention and contacts with radar facilities because they

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[2]In its Fee Development Report, FAA states that "the unit costs of providing ATC services to overflights within each environment is identical to the unit costs of providing ATC services to all air traffic within each environment"; "the level of ATC Services are assumed identical for all aircraft operations within a particular environment (i.e., enroute or oceanic"; "the cost of providing service for overflights is the same as for any other aircraft operation within the enroute and oceanic environments"; and "all enroute flights (overflights and domestic/international operations) which are handled by enroute air traffic controllers are assumed to use similar types of service. The same assumption also applies to those flights receiving procedural control in US-controlled oceanic airspace." Fee Development Report, at 9, 7 and 3.

occur within airspace: 1) in which aircraft are constantly requesting or requiring clearance to change altitude; 2) that is often congested, and 3) which is frequently affected by weather problems and airport delays. By contrast, the FAA's provision of ATC Services to Overflights is not labor intensive. Controllers assigned to handle Overflights typically have only two, brief voice communications with the pilot (once when the aircraft enters the sector being handled by that controller, and once when the aircraft departs the sector). Also, Overflights require no services, facilities or equipment beyond what the FAA uses to serve aircraft within the lower altitude sectors. In fact, Overflights require much less in the way of services and equipment than Low Altitude and Transitional Flights.

Because FAA must expend a substantially greater level of effort (in manpower and other resources) to provide ATC Services to Low Altitude and Transitional Flights than it does for Overflights, and because Low Altitude and Transitional Flights comprise the vast majority of flights operating within the En Route environment, the FAA's cost of providing ATC Services to an Overflight is much lower, on the average, than the FAA's cost of providing ATC Services to all aircraft within the En Route environment.

AIR TRAFFIC CONTROL BACKGROUND

4. I received a Bachelor of Science degree from St. Anselm's College, Manchester, New Hampshire. After spending four years in the U.S. Air Force as a radar operator, I joined the FAA as an air traffic controller at the Boston Center. I worked as a controller from 1958 through December 1974, when I became an "Area Specialist" at the Center. In June 1975, I returned as an air traffic controller at the Boston Center and also trained other controllers on use of ATC procedures and equipment. From November

1975 through February 1978 I served as a supervisor of air traffic controllers at Boston Center. From March through July 1978, I was the Operations Specialist at FAA's New England Regional Office, where I served as an expert and principal advisor to the Air Traffic Branch Chief in the day-to-day management and operation of several air traffic facilities. From August 1978 to October 1978 I was responsible for a team of 14 controllers at the Boston Center. From November 1978 through December 1986 I was an Air Traffic Control Specialist in the FAA's Washington, D.C. office. Since retiring from FAA in 1986 I have been a private consultant on ATC matters and procedures. I have provided, on behalf of the FAA and other parties, expert testimony on ATC matters in numerous Federal Courts throughout the United States. At the recommendation of the FAA, I have also provided to the Switzerland Supreme Court expert testimony on the United States air traffic control system.

AIR ROUTE TRAFFIC CONTROL CENTERS

5. An ARTCC is a facility established to provide ATC Services to aircraft operating on Instrument Flight Rules (***IFR***) flight plans within controlled airspace and principally (but not entirely) during the En Route phase of flight. Centers are divided into sectors. A "sector" refers to a geographical area encompassing certain altitudes. Each sector is manned by one or more controllers who provide Air Traffic Control services by use of radar and radios. Center controllers execute and receive "hand offs" to/from Terminal Facilities, other Centers and with other internal (Center) sectors.

6. Controllers at the 20 ARTCC's mostly provide ATC Services to Low Altitude and Transitional Flights. Controllers also provide ATC Services to Overflights and other aircraft operating at a high altitude, but these flights account for a very small

percentage of the aircraft operating within the En Route environment. Often, a single controller will be assigned to handle Overflights and other high altitude aircraft covering a large geographical area; whereas half a dozen controllers will be assigned to handle the Low Altitude and Transitional Flights within the same geographical area. Controllers in the Centers also provide some ATC Services to aircraft that are taking off or landing at airports without air traffic control towers.

7. Centers predominantly operate in an "R & R Environment," – *i.e.*, "Radar and Radio." Centers use "Air Route Surveillance Radar" primarily to detect and display an aircraft's position, altitude and direction while en route between Terminal Facilities. Radios are used to communicate with the pilots onboard the aircraft. Each sequential step of an IFR operation requires a clearance. Virtually all of these clearances are given via two-way radio communication between an air traffic controller and a pilot.

ATC SERVICES REQUIRED FOR OVERFLIGHTS

8. Overflights enter the Center areas at a very high altitude, usually in excess of 30,000 feet. Provision of ATC Services for Overflights is not labor-intensive. The Center's first contact with an Overflight is when the Center receives a "flight strip" -- a piece of paper which indicates the call sign, type of aircraft, speed, route and altitude of the aircraft. Subsequently, the involvement of each "sector" within a Center with respect to each Overflight typically is limited to: 1) observing the flashing indicator on the controller's screen which represents the handoff of the aircraft from another Center or another sector within the Center's airspace, 2) confirming the identity and altitude of the aircraft through a brief voice communication with the pilot when the aircraft enters the sector; and 3) using radar to follow the progress of the aircraft as it moves through the

sector's airspace and 4) a second brief voice communication with the pilot to inform him of the frequency to use to contact the subsequent sector or Center.

ATC SERVICES REQUIRED FOR LOW-ALTITUDE AND TRANSITIONAL FLIGHTS

9. The vast majority of aircraft that enter the En Route environment are either Low Altitude Flights (which spend the entire period below 18,000 feet), or are Transitional Flights (which spend some portion of the time at the lower altitudes on their way to/from the higher altitude sectors from/to the Terminal environment).

10. In contrast to Overflights, the process for a Center controller to handle aircraft operating in the lower altitude sectors is extremely labor intensive. This is primarily because these flights occur in airspace in which aircraft are constantly changing altitude. During the process in which aircraft are climbing or descending in altitude, the controller needs to monitor closely the movement of the aircraft on radar and to communicate with the pilot in order to provide separation from other aircraft and other airspace. It is not unusual for the controller to have several voice communications with the pilot during this stage. In addition, the other aircraft within the lower sectors need to be constantly monitored because of the fact that the aircraft within their vicinity are constantly changing altitude. The controllers need to ensure there is adequate "separation" among the various aircraft within the horizontal and vertical area surrounding the controlled-aircraft. FAA procedures call for aircraft at these lower altitudes to be separated horizontally by a minimum of 5 nautical miles, and vertically by a minimum of 1,000 feet.

11. Controllers handling aircraft within the lower altitude sectors also must expend considerable efforts because the airspace in lower altitudes is often extremely congested as a result of the proximity of the major airports. Congested airports and congested airspace produces a ripple effect whereby aircraft are required to increasingly change altitude in order to maintain proper separation, which thereby causes a greater controller workload. Delays at airports also require planes at lower altitudes to be placed into holding patterns while they await clearance to land at airports. (These delays typically do not affect Overflights because, at least from a vertical perspective, they are not in an airspace that is proximate to large commercial airports).

12. Given the conditions that confront controllers and pilots at the lower altitudes, a pilot sometimes does not hear, or mishears, the controller's effort to provide a clearance or other communication to the aircraft. This requires the controller to make further efforts to communicate with the pilot. For example, if a pilot does not pick out an initial communication from the controller for clearance to change altitude out of a continuous stream of communications between the controller and all the other aircraft on the frequency, then a time-consuming pause will follow, which is then followed by a renewed communication attempt by the controller in a tone of voice intended to draw the attention of the appropriate aircraft. Assuming that the aircraft now hears the clearance, he must repeat it back. Hopefully, what the pilot hears is what the controller intended the aircraft to hear. If not, and if the controller hears the pilot's erroneous read-back, the process must be repeated in an attempt to ensure that the proper altitude was spoken and heard. Eventually the pilot will repeat back the correct altitude, which confirms that both the pilot and the controller are aware of the aircraft's current clearance. This process

assumes that another aircraft, perhaps one that just checked on the frequency, did not attempt to make his obligatory initial radio call to the controller when he perceived a pause in the conversation. Occasionally that call is made at the same time as one of the calls between the controller and the aircraft that is given the altitude change. Further communications would then become necessary to sort out such miscommunications. This is merely one example of the manner in which the conditions present in the lower altitude sectors make the controller's job in handling lower altitude flights so labor intensive.

13. Bad weather increases exponentially the work that controllers must do to handle aircraft operating in the lower altitude sectors. The need for aircraft to deviate around storms means that the controller is required to engage in additional voice communications with the flight and radar monitoring. Before placing the controlled-aircraft into a different altitude or geographic area, the controller needs to check on the status of other aircraft in that area, and frequently in a bad-weather situation there will be a greater number of aircraft deviating, thus increasing the controller's workload. By contrast, Overflights often fly above the weather area and if they expect to confront storms on their route of flight at their altitude, it is normally easier for the controller to allow aircraft to maneuver away from the bad weather because of less traffic and activity surrounding the overflight.

14. Low Altitude and Transitional Flights also require a greater level of FAA resources through the provision of Remote Communications Air/Ground facilities (***RCAG***) and /or Remote Communications Outlets (***RCO***s). Communications require "line of sight" transmissions and interference from mountain ranges and other

obstructions can interfere with air-to-ground and ground-to-ground communications. FAA expends more resources to provide radio towers and other items associated with RCAGs, RCOs and/or Remote Transmitter/Receivers (***RTRs***) for Low-Altitude and Transitional Flights than for Overflights. In order for messages to be relayed at lower altitudes, the messages may need to be routed indirectly, to circumvent the mountains and other obstacles. Such communications problems (mountains and/or other obstacles restricting "line-of-sight") do not normally exist in the high altitude structure where Overflights are found, thereby saving the FAA the expense of installing and maintaining numerous additional communications facilities.

15. The following table summarizes the reasons why FAA incurs substantially greater manpower and other resources to provide ATC Services to aircraft operating within the lower altitude sectors than to Overflights.

DIFFERENCES BETWEEN ATC SERVICES REQUIRED FOR LOW-ALTITUDE/TRANSITIONAL FLIGHTS AND OVERFLIGHTS

Services Required	LowAltitude/Transitional	Overflight
Hand–Off from Terminal Facility	Yes	No
Voice Clearance for Altitude and Speed Adjustments	Yes	No
Monitoring of Flight on Radar Screen	Extensive	Minimal
Voice Clearance for Deviation Due to Weather Problems	Yes	Infrequent
Voice Communications to Deal with Airport Delays and Air Traffic Control Holding Patterns	Yes	Rare
Complications from Competing Use of Radio Systems	Common	Rare
Provision and Maintenance of RCAGs, RCOs and/or RTRs	Greater Quantity Needed because of Obstructions	Zero or No Obstructions, so Routing Can be Direct which Leads to Less Usage and Reduced Costs

16. Since FAA must expend a substantially greater level of effort (in manpower and other resources) to provide ATC Services to Low Altitude and Transitional Flights (in contrast to Overflights), and Low Altitude and Transitional Flights comprise the vast majority of flights operating within the En Route environment, it is clear that the FAA's average cost to provide ATC Services to an Overflight is much lower than FAA's average cost to provide ATC Services to all aircraft within the En Route environment. It is plainly erroneous for FAA to assume that its average cost to provide ATC Services to Overflights (per 100 nautical miles) is the same as its average cost to provide ATC Services to all aircraft (per-100 nautical miles) operating within the En Route environment.

USE OF ARTCC LABOR AND FACILITIES FOR NON EN-ROUTE AIRCRAFT

17. FAA also made a separate and independent error in its Fee Development Report. Although FAA appears to have recognized that four of the Centers also provide some ATC Services for Oceanic flights, FAA ignored that all of the Centers also provide some level of ATC Services for flights which are not operating in the EN Route or Oceanic environments. In fact, some controllers at En Route Centers are required to assist aircraft that are taking off or landing at airports in the United States that lack an air traffic control tower. These aircraft are not operating within the En Route environment; yet the Center controllers are clearly providing a service to these flights. The FAA is undoubtedly aware of this situation, but has made no effort of which I am aware to quantify the costs involved. Instead, FAA included these costs within its cost

pool for the En Route environment, and therefore its estimate of its total En Route costs is overstated to that extent.

Further Declarant sayeth not.

JOSEPH A. BEAUDOIN

Dated: July 18, 2000